BACTERIOLOGICAL REVIEWS

VOLUME 40 • NUMBER 4 • DECEMBER 1976

Correspondence relating to editorial matters should be addressed to the Editor, Prof. R. G. E. Murray, Department of Bacteriology, University of Western Ontario, London N6A 5C1, Ontario, Canada.

Bacteriological Reviews, a publication of the American Society for Microbiology, 1913 I St., N.W., Washington, D.C. 20006, accepts reviews and monographs dealing with all aspects of microbiology. *Reviews* is published quarterly (March, June, September, and December), one volume per year. The nonmember subscription price is $20 per year. The member subscription price is $7 per year. Single issues are $6. Correspondence relating to subscriptions, reprints, defective copies, availability of back issues, or lost or late proofs should be directed to the ASM Publications Office, 1913 I St., N.W., Washington, D.C. 20006 (area 202 833-9680).

Second-class postage paid at Washington, D.C. 20006, and at additional mailing offices.
Made in the United States of America.

BACTERIOLOGICAL REVIEWS

INSTRUCTIONS TO AUTHORS

Bacteriological Reviews accepts reviews and monographs dealing with all aspects of microbiology. Authoritative and critical reviews of the current state of knowledge are preferred, although historical analyses will be accepted if the importance of the subject justifies this approach. Unevaluated compilations of the literature and annotated bibliographies do not fall within the scope of *Bacteriological Reviews*. Manuscripts of talks delivered at symposia and round tables are likewise unacceptable; however, their authors are encouraged to discuss with the Editor the possibility of using such material as the basis for preparation of a review, when publication in this form seems appropriate.

Monographs should embody the results of unusually extensive and well-rounded original investigations, the usefulness of which would be diminished by publication in the form of a series of separate papers. Past experience suggests that the monograph is particularly appropriate for the presentation of a definitive study on the biology of a microbial group.

Members of the Editorial Board will welcome any suggestions of topics and authors, either from prospective authors or from others. Prospective authors are advised to discuss with the Editor the suitability of their proposed contribution. The preparation of a synopsis or topical outline is desirable, since it often elicits constructive suggestions from editorial consultants. In addition, a one or two paragraph statement detailing the aim, scope, and relevance of the topic to be reviewed must be included with the outline. A review cannot, of course, be finally accepted until the finished product has been examined.

The editorial style of *Bacteriological Reviews* conforms to the *CBE Style Manual* (3rd ed., AIBS, 1972). References should be listed alphabetically according to the last name of the senior author, numbered serially, and cited by number in the text. For example: 136. Salton, M. R. J. 1952. Cell wall of *Micrococcus lysodeikticus* as the substrate of lysozyme. Nature **170:**746–747. Each reference cited should be checked with the original publication; titles and both first and last pages should be included. References to unpublished data, abstracts, theses, and personal communications should be kept to a minimum; if unavoidable, these citations should be made in the text only, not in the list of references. Names of journals are abbreviated according to *Bibliographic Guide for Editors & Authors* (American Chemical Society, 1974). A table of contents showing the major headings and subheadings of the text is usually desirable; consult recent issues of *Bacteriological Reviews* for style. All abbreviations used (except those for standard units of measurement) should be defined parenthetically at first use in the text. Biochemical nomenclature, including abbreviations and symbols, should follow the recommendations of the IUPAC-IUB Commission on Biochemical Nomenclature (CBN) and the Instructions to Authors of J. Biol. Chem. and Arch. Biochem. Biophys. (first issue of each year), which are based upon the CBN Recommendations and contain a list thereof. Reprints of these Recommendations and advice on biochemical and chemical nomenclature are available from the NRC Office of Biochemical Nomenclature (W. E. Cohn, Director), Biology Division, Oak Ridge Nat'l. Lab., Box Y, Oak Ridge, Tenn. 37830 (phone: 615-483-8611, Ext. 3-7514). Enzyme activities should be expressed in the terms set out in CBN's *Enzyme Nomenclature* (1972) (Elsevier Scientific Publishing Co.). Lengths, weights, volumes, and molarities should make use of the prefixes m, μ, n, and p (for 10^{-3}, 10^{-6}, 10^{-9}, and 10^{-12}, respectively), where applicable, avoiding such compound prefixes as mμ and $\mu\mu$. Metric units should be employed as much as possible. The Editors reserve the privilege of editing manuscripts to make them conform to the above-mentioned stylistic conventions. Genetics symbols introduced by the reviewer should essentially follow the recommendations of Demerec et al. (Genetics **54:**61, 1966). As one of the requirements for description of a new species, we require deposition of the type culture in a recognized culture collection and designation of the accession number.

To expedite editorial review and preparation for the printers, the author should *submit two copies of the manuscript, including illustrations*. Original drawings should not be submitted; glossy prints are required. When appropriate, magnification should be indicated by a suitable scale on the photograph. Each figure should be numbered and should include the name of the author, either in the margin or on the back (marked lightly with a *soft* pencil). All material should be double-spaced, including quotations, tables, legends for text figures, and references. This is essential to allow space for corrections and printer's instructions. Text footnotes are not permitted. (Subsidiary or extraneous material may be given, if necessary, within parentheses or brackets.) It is preferable to summarize supporting evidence whenever possible. When original data are presented, it is essential that the methods be fully described or that reference be made to previously published methods. It is the author's responsibility to obtain permission from the copyright owner to reproduce figures, tables, or quotations of more than 12 lines of text taken intact from previous publications, either his own or those of another author. Note that the journal or publisher (not the author) is the copyright owner; however, as a matter of courtesy the author's permission should be obtained as well. Each contributor will receive 1,000 gratis reprints of his contribution; additional reprints (in multiples of 100) may be purchased if desired. A table showing the cost of reprints, and an order form, will be sent with the proof. There are no page charges.

ACKNOWLEDGMENT

Sincere appreciation is expressed to the following scientists, who served as consultants to the Editorial Board and generously gave their time and talent for the review of manuscripts during 1976.

M. Behme
R. H. Behme
T. J. Beveridge
R. E. Bernlohr
J. D. Bibel
M. P. Bryant
R. O. Burns
G. H. Chambliss
J. E. Cronan, Jr.
E. A. Dawes
J. B. Derbyshire
R. N. Doetsch
C. E. Dolman
K. Ebisuzaki
J. Flaks
D. Goldstein
M. B. Goren
D. Gottlieb
F. L. Holmes
D. E. Mahoney
M. Mandel
G. P. Manire
P. B. Moens
J. W. Moulder
T. G. Pridham
J. C. Rabinowitz
C. F. Robinow
A. E. Ritchie
M. Schaechter
J. C. Sherris
L. Siminovitch
S. K. Singhal
R. M. Smibert
G. H. Strejan
R. S. Wolfe

U.S. POSTAL SERVICE

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

(Required by 39 U.S.C. 3685)

1. TITLE OF PUBLICATION	2. DATE OF FILING
BACTERIOLOGICAL REVIEWS	10/1/76
3. FREQUENCY OF ISSUE	**3A. NO. OF ISSUES PUBLISHED ANNUALLY** / **3B. ANNUAL SUBSCRIPTION PRICE**
QUARTERLY	4 / Memb. $7, Nonmemb. $20

4. LOCATION OF KNOWN OFFICE OF PUBLICATION *(Street, City, County, State and ZIP Code) (Not printers)*

1913 Fye St.,N.W., Washington, D.C. 20006

5. LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS *(Not printers)*

1913 Fye St., N.W., Washington, D.C. 20006

6. NAMES AND COMPLETE ADDRESSES OF PUBLISHER, EDITOR, AND MANAGING EDITOR

PUBLISHER *(Name and Address)*

AMERICAN SOCIETY FOR MICROBIOLOGY, 1913 Fye St.,N.W., Washington, D.C. 20006

EDITOR *(Name and Address)*

R.G.E. MURRAY, Dept. of Bacteriology,Univ. of Western Ontario,London,Ontario,CANADA

MANAGING EDITOR *(Name and Address)*

ROBERT A. DAY, 1913 Fye St.,N.W., Washington, D.C. 20006

7. OWNER *(If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)*

NAME	ADDRESS
AMERICAN SOCIETY FOR MICROBIOLOGY	1913 Fye St.,N.W.,Washington,D.C. 20006

8. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES *(If there are none, so state)*

NAME	ADDRESS
NONE	

9. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES *(Section 132.122, PSM)*

The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes *(Check one)*

[X] HAVE NOT CHANGED DURING PRECEDING 12 MONTHS [ ] HAVE CHANGED DURING PRECEDING 12 MONTHS *(If changed, publisher must submit explanation of change with this statement.)*

10. EXTENT AND NATURE OF CIRCULATION	AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS	ACTUAL NO. COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE
A. TOTAL NO. COPIES PRINTED *(Net Press Run)*	17131	20997
B. PAID CIRCULATION 1. SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS AND COUNTER SALES	NONE	NONE
2. MAIL SUBSCRIPTIONS	14206	18170
C. TOTAL PAID CIRCULATION *(Sum of 10B1 and 10B2)*	14206	18170
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES	2	3
E. TOTAL DISTRIBUTION *(Sum of C and D)*	14208	18173
F. COPIES NOT DISTRIBUTED 1. OFFICE USE, LEFT OVER, UNACCOUNTED, SPOILED AFTER PRINTING	2923	2824
2. RETURNS FROM NEWS AGENTS	NONE	NONE
G. TOTAL *(Sum of E, F1 and 2—should equal net press run shown in A)*	17131	20997

11. I certify that the statements made by me above are correct and complete.

SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER, OR OWNER

Robert A. Day Managing Editor

12. FOR COMPLETION BY PUBLISHERS MAILING AT THE REGULAR RATES *(Section 132.121, Postal Service Manual)*

39 U. S. C. 3626 provides in pertinent part: "No person who would have been entitled to mail matter under former section 4359 of this title shall mail such matter at the rates provided under this subsection unless he files annually with the Postal Service a written request for permission to mail matter at such rates."

In accordance with the provisions of this statute, I hereby request permission to mail the publication named in Item 1 at the phased postage rates presently authorized by 39 U. S. C. 3626.

SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER, OR OWNER

PS Form 3526 *(Page 1)* Apr. 1976

(See instructions on reverse)

AUTHOR INDEX

VOLUME 40

SUBJECT INDEX

VOLUME 40

BACTERIOLOGICAL REVIEWS

VOLUME 40

BALTIMORE, MD.
1976

Volume 40 · Number 1 · March 1976

CONTENTS

Volume 40 · Number 2 · June 1976

CONTENTS

Errata

* Asterisk refers to person to whom inquiries regarding the paper should be addressed.

Volume 40 • Number 3 • September 1976

CONTENTS

Volume 40 • Number 4 • December 1976

CONTENTS

INDEX TO DATE OF ISSUE

Month	Date of Issue	Pages
March	31 March 1976	1–258
June	21 July 1976	259–525
September	29 September 1976	527–792
December	29 December 1976	793–962